WHAT IS CLAIMED IS:

1. A method of reducing chromatic bleeding artifacts in a digital image, the method comprising modifying chrominance values of at least some pixels in the digital image, the pixels being modified according to its luminance values and chromatic dynamic range.

2. The method of claim 1, wherein the chromatic dynamic range for each pixel is a function of minimum and maximum chroma values of a local pixel neighborhood, whereby the chromatic dynamic range is determined on a pixel-by-pixel basis.

3. The method of claim 1, wherein the chrominance values of a pixel are scaled by the ratio C'/C if the original chroma value (C) of the pixel is modified, where C' is the new chroma value.

4. The method of claim 1, wherein a chroma value of a pixel is modified to no more than the minimum of the local neighborhood if the pixel has a high luminance, and wherein the chroma value of a pixel is not modified if the pixel has a small dynamic range.

5. The method of claim 1, wherein the chrominance values of at least some pixels are modified by $C' = C - f(Y,D)\cdot(C - C_0)$, where C' is the new chroma value of the pixel, C is the original chroma value of the pixel, Y is the luminance of the pixel, D is the chromatic dynamic range, C_0 is a chromatic modulus having a value between zero and C_m, C_m is the minimum chroma of the local neighborhood for the pixel, and $f(Y,D)$ is a parametric expression that determines the amount of relative chroma reduction.

6. The method of claim 5, wherein $f(Y,D)$ complies with $f(Y,D) \rightarrow 1$ for $Y \rightarrow 1$; and $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$.

7. The method of claim 6, wherein $f(Y,D)$ also complies with $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$ and $Y \rightarrow 1$.

8. The method of claim 5, wherein $C_0 = \max[C_m\text{-}D,0])$.

9. The method of claim 5, wherein the modulus $C_0 = C_m$.

10. The method of claim 5, wherein $C_0=0$.

11. The method of claim 5, wherein $f(Y,D) = \max\left[1 - \alpha(\frac{1-Y}{D}),0\right]$, where α is a positive term.

12. The method of claim 11, wherein C'=C if $Y<(1-D/\alpha)$.

13. The method of claim 1, wherein each pixel of interest is mapped by:

determining a chromatic dynamic range;

leaving the pixel unmodified if the chromatic dynamic range is less than a predetermined threshold; and

computing a parametric function if the chromatic dynamic range is greater than the threshold and using the parametric function to modify the chrominance value of the pixel, the parametric function being a function of the luminance and local chromatic dynamic range of the pixel.

14. The method of claim 1, wherein the digital image is reconstructed from subsampled chrominance values; and wherein the chromatic dynamic range is determined from subsampled chrominance values.

15. A method of reconstructing a digital image from a luminance channel and subsampled chrominance channels, the method comprising:

interpolating the chrominance channels; and

reducing chromatic bleeding artifacts from the interpolated chrominance channels by modifying chrominance values of at least some pixels in the digital image, the pixels being modified according to its luminance values and chromatic dynamic ranges.

16. Apparatus for reducing chromatic bleeding artifacts in a digital image, the apparatus comprising a processor for modifying chrominance values of at least some pixels in the digital image, the pixels being modified according to luminance values and chromatic dynamic ranges.

17. The apparatus of claim 16, wherein the chromatic dynamic range for each pixel is a function of minimum and maximum chroma values of a local pixel neighborhood; and wherein the processor determines local chromatic dynamic ranges on a pixel-by-pixel basis.

18. The apparatus of claim 17, wherein the processor scales the chrominance values of a pixel by the ratio C'/C if the original chroma value (C) of the pixel is modified, where C' is the new chroma value.

19. The apparatus of claim 17, wherein the processor modifies a chroma value of a pixel to no more than the minimum of the local neighborhood if the pixel has a high luminance, and wherein the processor does not modify the chroma value of a pixel if the pixel has a small dynamic range.

20. The apparatus of claim 17, wherein the chrominance values of at least some pixels are modified by $C' = C - f(Y,D)\cdot(C - C_0)$, where C' is the new chroma value of the pixel, C is the unmodified chroma value of the pixel, Y is the luminance of the pixel, D is the local chromatic dynamic range, C_0 is a chromatic modulus having a value between zero and C_m, C_m is the minimum chroma of the local neighborhood for the pixel, and $f(Y,D)$ is a parametric expression that determines the amount of relative chroma reduction and that ranges between 0 and 1.

21. The apparatus of claim 20, wherein $f(Y,D)$ complies with $f(Y,D) \rightarrow 1$ for $Y \rightarrow 1$; and $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$.

22. The apparatus of claim 21, wherein $f(Y,D)$ also complies with $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$ and $Y \rightarrow 1$.

23. The apparatus of claim 20, wherein $C_0 = \max[C_m - D, 0]$.

24. The apparatus of claim 20, wherein the modulus $C_0 = C_m$.

25. The apparatus of claim 20, wherein $C_0 = 0$.

26. The apparatus of claim 20, wherein $f(Y,D) = \max\left[1 - \alpha\left(\frac{1-Y}{D}\right), 0\right]$, where α is a positive term.

27. The apparatus of claim 26, wherein C'=C if $Y < (1 - D/\alpha)$.

28. The apparatus of claim 16, wherein the processor reconstructs the digital image from subsampled chrominance values; and wherein the processor determines the chromatic dynamic ranges from the subsampled chrominance values.

29. An article of manufacture for a processor, the article comprising:

computer memory; and

a program stored in the memory, the program, when executed, causing the processor to reduce chromatic bleeding artifacts in a digital image by modifying chrominance values of at least some pixels in the digital image, the pixels being modified according to its luminance values and chromatic dynamic range

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